

APPENDIX G

Rainfall Analysis



RAINFALL ANALYSIS OVERVIEW

An understanding of climatic conditions is an essential part of predicting the availability of certain water resources. A goal of the Kissimmee Basin Water Supply Plan (KB Plan) is to identify areas of potential water supply shortfalls and sufficient supply sources to meet the 1-in-10 year demand needs occurring over a 20-year planning horizon. Rainfall is responsible for nearly all surface water inflows and outflows in the KB Planning Area, and is an important source of recharge to the Surficial Aquifer System and Floridan Aquifer System. Rainfall is the single most important factor in the occurrence of water shortages in the planning region.

RAINFALL DISTRIBUTION

Rainfall varies from county to county within the KB Planning Area. Eleven rainfall stations distributed throughout the planning area were used to assess mean rainfall conditions (**Figure 1**). The District chose these stations as they have a minimum of 30 years of reliable records. **Table 1** presents a summary of the data, and lists the period of record for each station along with the database keys (DBKEYs) used to retrieve the data from the District's DBHYDRO database. Abtew and Ali (1999) performed the most recent Districtwide analysis of rainfall distribution.

The mean annual rainfall for the KB Planning Area is 49.7 inches. **Figure 2** presents the mean monthly distribution of rainfall at the rainfall stations and **Table 2** lists the average monthly rainfall values. The wet period begins on June 1 and ends on October 31, with the heaviest rainfall usually occurring from June through August. The dry period begins on November 1 and ends on May 31. December is usually the month with the lowest rainfall.

RAINFALL DATA PREPARATION

Table 3 through **Table 13** present the monthly rainfall for each rainfall station during the entire period of record. **Figure 3** shows the statistical 1-in-10 year drought event plots for the rainfall stations in the Kissimmee Planning Area and **Table 14** lists the values for 1-in-10 year drought events. In some instances, not every daily value was available for each station location. In these occurrences, the inverse distance squared method was used to fill in daily missing values in each data set before calculating monthly averages.

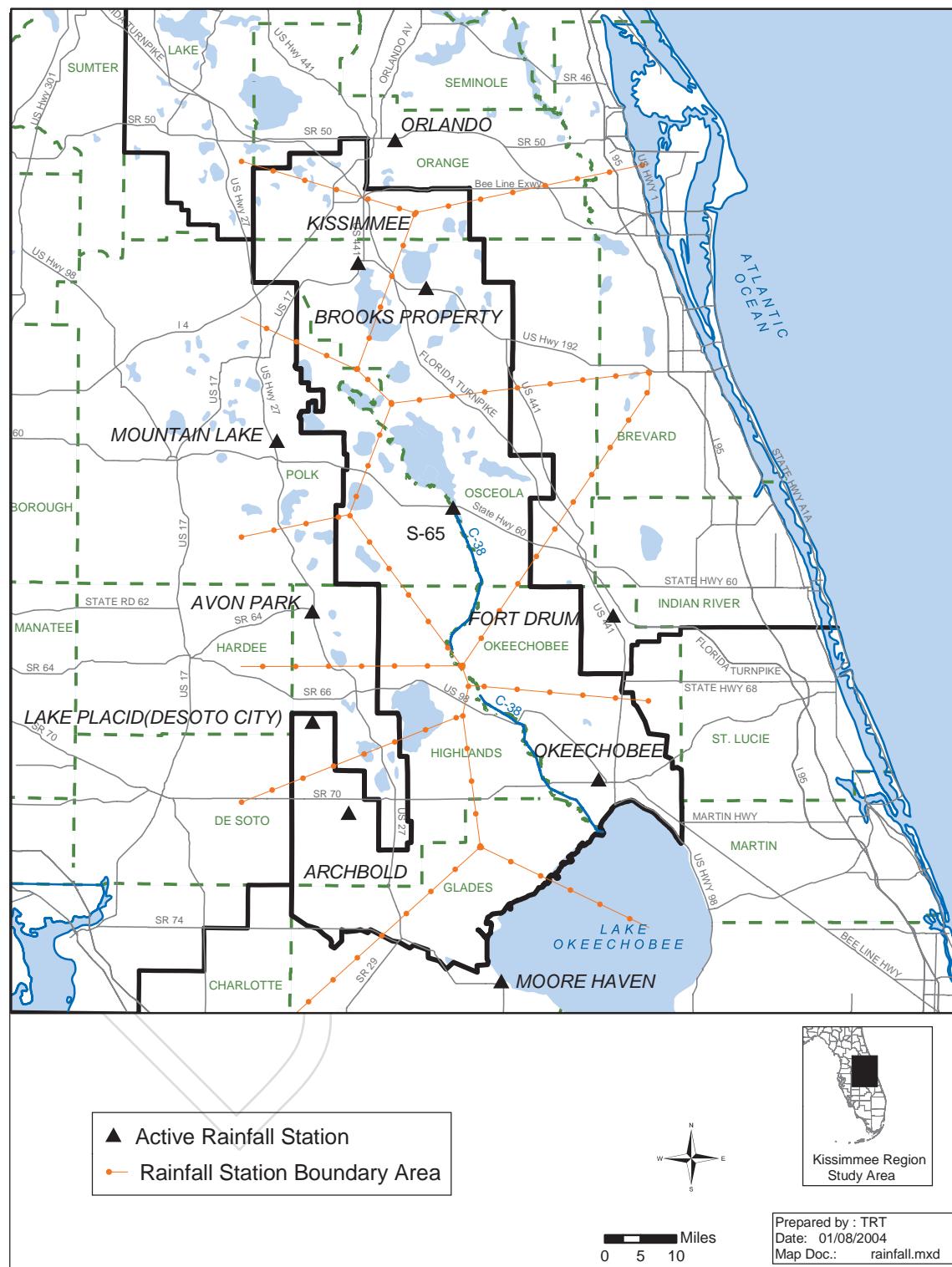


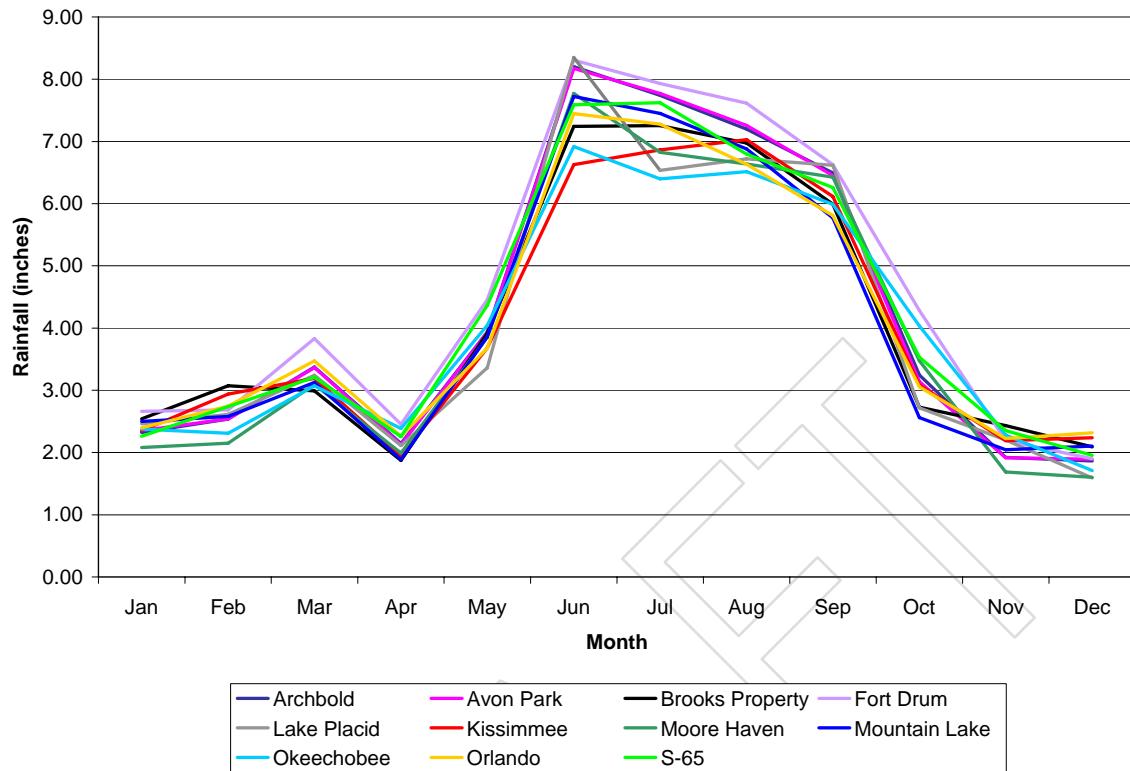
Figure 1. Rainfall Stations in the KB Planning Area.

Table 1. Average Rainfall Data for Rainfall Stations in the KB Planning Area.

County	Rainfall Station	Average Annual Rainfall	Period of Record ^a		Maximum Monthly Rainfall		Minimum Monthly Rainfall		% Rain Falling in Wet Season	Primary DBKEY ^b
			Num. of Years	Years	inches	month	inches	month		
Glades	Moore Haven	47.59	36	1965-2000	7.77	Jun	1.60	Dec	65%	PT322, PT323
Highlands	Archbold	50.99	36	1965-2000	8.20	Jun	1.87	Dec	64%	PT143, PT144
	Avon Park	50.91	36	1965-2000	8.17	Jun	1.89	Dec	64%	PT145-PT148
	Desoto City (Lake Placid)	48.52	36	1965-2000	8.35	Jun	1.59	Dec	64%	PT199, PT200
Okeechobee	Fort Drum	54.95	36	1965-2000	8.31	Jun	1.90	Dec	63%	PT218, PT219
	Okeechobee	48.03	36	1965-2000	6.92	Jun	1.71	Dec	62%	PT347-PT350, 06020
Orange	Orlando	49.32	36	1965-2000	7.45	Jul	2.22	Nov	61%	PT351, PT352
Osceola	Kissimmee	48.25	36	1965-2000	7.03	Aug	1.95	Apr	62%	PT283, PT284
	Brooks Property	49.11	33	1963-1995	7.25	Jul	1.87	Apr	61%	05813
	S-65	50.94	36	1965-2000	7.62	Jul	1.95	Dec	62%	05940
Polk	Mountain Lake	48.48	36	1965-2000	7.72	Jun	1.89	Apr	63%	PT326
Overall Average		49.73			7.71		1.86		63%	

a. Period of Record.

b. For those interested in accessing DBHYDRO. Missing daily data replaced by weighted averages of neighboring stations.

**Figure 2.** Mean Monthly Distribution of Rainfall at Stations in the KB Planning Area.**Table 2.** Average Rainfall (in inches) for Rainfall Stations in the KB Planning Area.

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Archbold	2.32	2.54	3.37	2.14	3.94	8.20	7.74	7.20	6.49	3.25	1.92	1.87	50.99
Avon Park	2.35	2.54	3.37	2.13	3.92	8.17	7.77	7.26	6.45	3.14	1.92	1.89	50.91
Brooks Property	2.54	3.07	2.99	1.87	3.91	7.24	7.25	6.98	5.99	2.73	2.43	2.09	49.11
Fort Drum	2.66	2.69	3.83	2.45	4.45	8.31	7.93	7.61	6.63	4.28	2.19	1.90	54.95
Lake Placid	2.46	2.61	3.24	2.11	3.36	8.35	6.53	6.72	6.62	2.72	2.20	1.59	48.52
Kissimmee	2.35	2.94	3.19	1.95	3.68	6.63	6.86	7.03	6.12	3.08	2.19	2.24	48.25
Moore Haven	2.08	2.15	3.09	1.99	3.85	7.77	6.82	6.64	6.43	3.47	1.68	1.60	47.59
Mountain Lake	2.50	2.58	3.12	1.89	3.86	7.72	7.45	6.88	5.77	2.56	2.04	2.10	48.48
Okeechobee	2.38	2.31	3.07	2.39	4.04	6.92	6.40	6.51	5.99	4.04	2.28	1.71	48.03
Orlando	2.40	2.75	3.47	2.26	3.68	7.45	7.28	6.63	5.81	3.06	2.22	2.32	49.32
S-65	2.26	2.74	3.21	2.26	4.36	7.59	7.62	6.80	6.26	3.53	2.35	1.95	50.94
Average	2.39	2.63	3.27	2.13	3.91	7.67	7.24	6.93	6.23	3.26	2.13	1.93	49.73

Table 3. Monthly and Mean Rainfall (inches) at Archbold Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	1.08	4.38	4.26	1.77	0.54	7.74	9.55	5.45	5.54	4.83	1.10	2.05	48.30
1966	5.32	5.05	1.47	2.66	4.83	9.94	6.78	7.10	6.88	3.25	0.47	1.09	54.84
1967	0.93	3.44	0.77	0.09	0.93	9.00	9.28	8.14	5.24	2.20	0.35	2.12	42.48
1968	0.59	2.09	1.08	0.65	6.50	15.47	8.38	5.49	5.45	4.97	2.52	0.38	53.56
1969	1.26	1.56	7.43	1.79	4.19	12.21	6.09	5.99	9.65	8.40	2.69	2.83	64.09
1970	4.78	3.57	8.85	0.19	4.97	8.62	8.94	4.24	4.93	3.16	0.12	0.31	52.68
1971	0.57	1.80	1.06	0.08	2.42	7.89	5.79	9.06	7.22	3.20	1.28	1.08	41.45
1972	0.25	2.99	0.78	5.90	2.25	10.53	3.90	5.35	4.27	3.35	3.52	1.97	45.06
1973	5.11	2.86	2.93	4.90	4.41	5.47	8.27	6.43	9.97	3.47	0.29	2.39	56.50
1974	0.33	1.09	0.05	1.41	5.39	14.12	16.89	10.23	4.87	0.56	0.53	2.93	58.40
1975	0.13	0.49	1.04	1.81	6.97	8.63	8.76	5.84	5.55	3.07	0.13	0.60	43.02
1976	0.08	0.76	2.45	1.88	4.98	9.75	6.50	7.65	6.61	3.42	1.75	1.19	47.02
1977	1.91	0.53	1.02	0.69	6.53	6.60	4.68	9.17	9.87	3.29	4.17	4.90	53.36
1978	1.81	2.38	3.16	0.43	7.00	9.04	10.00	7.71	4.24	3.63	1.76	4.16	55.32
1979	7.91	1.09	2.21	1.37	4.81	1.70	10.58	12.76	14.15	0.96	0.90	2.45	60.89
1980	3.72	1.65	1.47	3.90	3.90	2.40	6.64	4.71	4.05	0.40	3.21	1.34	37.39
1981	0.36	3.46	1.24	0.16	2.82	10.38	7.50	10.54	6.02	0.98	1.35	0.22	45.03
1982	1.16	2.06	6.52	4.15	6.96	11.14	7.79	5.97	10.65	2.59	1.57	0.51	61.07
1983	4.41	10.85	4.83	2.63	1.01	5.44	7.31	6.74	2.37	5.18	1.84	2.45	55.06
1984	0.45	2.93	6.42	2.75	5.09	7.39	13.09	2.71	3.70	0.13	3.13	0.61	48.40
1985	0.40	0.76	2.29	3.47	2.77	7.20	7.10	4.93	6.46	4.37	2.62	1.60	43.97
1986	1.33	0.78	6.03	0.21	1.56	15.85	7.75	8.14	5.06	4.05	0.08	3.35	54.19
1987	3.10	1.14	6.61	0.52	2.44	3.27	4.52	3.50	9.92	6.63	5.94	1.23	48.82
1988	2.39	2.37	6.21	1.47	2.90	3.01	9.29	10.20	2.41	1.81	3.80	1.73	47.59
1989	2.03	0.33	4.11	2.98	2.21	4.79	7.60	7.80	8.10	4.35	0.97	2.54	47.81
1990	2.21	3.27	1.79	1.34	1.72	9.20	10.89	9.40	3.88	0.53	0.45	1.01	45.69
1991	5.17	1.48	4.61	2.03	5.87	7.37	8.66	7.39	4.70	2.98	0.86	0.88	52.00
1992	0.36	4.73	2.26	4.91	3.84	15.77	4.67	12.12	6.71	1.91	4.37	0.58	62.23
1993	5.12	3.07	5.74	2.78	1.33	4.96	11.03	4.28	4.63	6.95	0.82	1.32	52.03
1994	3.82	1.84	3.49	2.00	4.30	11.35	3.64	9.03	8.31	2.57	4.16	3.83	58.34
1995	2.89	2.99	4.72	3.27	2.05	8.35	7.56	8.15	6.92	7.15	1.20	0.68	55.93
1996	2.42	1.71	4.76	1.16	7.61	8.32	5.57	6.03	0.70	3.72	0.20	1.64	43.84
1997	1.19	3.02	1.67	5.47	4.98	6.76	6.29	4.40	9.16	0.68	4.46	7.60	55.68
1998	5.65	8.28	5.39	0.95	3.94	0.90	7.08	6.22	8.73	2.90	5.16	0.94	56.14
1999	2.29	0.27	0.76	3.48	6.52	10.89	5.34	14.31	8.93	3.86	1.19	2.26	60.10
2000	1.15	0.37	2.00	1.92	1.17	3.76	5.06	1.94	7.95	1.37	0.24	0.38	27.31
Mean	2.32	2.54	3.37	2.14	3.94	8.20	7.74	7.20	6.49	3.25	1.92	1.87	50.99

Table 4. Monthly and Mean Rainfall (inches) at Avon Park Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	1.54	4.10	4.00	1.53	0.19	8.41	10.62	5.71	5.64	3.73	0.92	2.47	48.86
1966	5.91	4.95	1.47	2.38	4.65	8.02	6.23	6.97	6.31	2.23	0.31	1.25	50.68
1967	0.87	3.86	0.68	0.04	1.19	9.93	9.68	9.60	4.35	1.34	0.22	2.46	44.22
1968	0.57	2.10	1.10	0.64	6.44	14.81	8.54	6.10	5.64	4.05	2.78	0.43	53.20
1969	1.26	1.56	7.43	1.79	4.19	12.21	6.09	5.99	9.65	8.40	2.69	2.83	64.09
1970	4.78	3.57	8.85	0.19	4.97	8.62	8.94	4.24	4.93	3.16	0.12	0.31	52.68
1971	0.57	1.80	1.06	0.08	2.42	7.89	5.79	9.06	7.22	3.20	1.28	1.08	41.45
1972	0.25	2.99	0.78	5.90	2.25	10.53	3.90	5.35	4.27	3.35	3.52	1.97	45.06
1973	5.11	2.86	2.93	4.90	4.41	5.47	8.27	6.43	9.97	3.47	0.29	2.39	56.50
1974	0.33	1.09	0.05	1.41	5.39	14.12	16.89	10.23	4.87	0.56	0.53	2.93	58.40
1975	0.13	0.49	1.04	1.81	6.97	8.63	8.76	5.84	5.55	3.07	0.13	0.60	43.02
1976	0.08	0.76	2.45	1.88	4.98	9.75	6.50	7.65	6.61	3.42	1.75	1.19	47.02
1977	1.91	0.53	1.02	0.69	6.53	6.60	4.68	9.17	9.87	3.29	4.17	4.90	53.36
1978	1.81	2.38	3.16	0.43	7.00	9.04	10.00	7.71	4.24	3.63	1.76	4.16	55.32
1979	7.91	1.09	2.21	1.37	4.81	1.70	10.58	12.76	14.15	0.96	0.90	2.45	60.89
1980	3.72	1.65	1.47	3.90	3.90	2.40	6.64	4.71	3.71	0.40	3.21	1.34	37.05
1981	0.36	3.46	1.24	0.16	2.82	10.38	7.50	10.54	6.02	0.98	1.35	0.22	45.03
1982	1.16	2.06	6.52	4.15	6.96	11.14	7.79	5.97	10.65	2.59	1.57	0.51	61.07
1983	4.41	10.85	4.83	2.63	1.01	5.44	7.31	6.74	2.37	5.18	1.84	2.45	55.06
1984	0.45	2.93	6.42	2.75	5.09	7.39	13.09	2.71	3.70	0.13	3.13	0.61	48.40
1985	0.40	0.76	2.29	3.47	2.77	7.20	7.10	4.93	6.46	4.37	2.62	1.60	43.97
1986	1.33	0.78	6.03	0.21	1.56	15.85	7.75	8.14	5.06	4.05	0.08	3.35	54.19
1987	3.10	1.14	6.61	0.52	2.44	3.27	4.52	3.50	9.92	6.63	5.94	1.23	48.82
1988	2.39	2.37	6.21	1.47	2.90	3.01	9.29	10.20	2.41	1.81	3.80	1.73	47.59
1989	2.03	0.33	4.11	2.98	2.21	4.79	7.60	7.80	8.10	4.35	0.97	2.54	47.81
1990	2.21	3.27	1.79	1.34	1.72	9.20	10.89	9.40	3.88	0.53	0.45	1.01	45.69
1991	5.17	1.48	4.61	2.03	5.87	7.37	8.66	7.39	4.70	2.98	0.86	0.88	52.00
1992	0.36	4.73	2.26	4.91	3.84	15.77	4.67	12.12	6.71	1.91	4.37	0.58	62.23
1993	5.12	3.07	5.74	2.78	1.23	4.96	11.03	4.28	4.63	6.95	0.82	1.32	51.93
1994	3.82	1.84	3.49	2.00	4.30	11.35	3.64	9.03	8.31	2.57	4.16	3.83	58.34
1995	2.89	2.99	4.72	3.27	2.05	8.35	7.56	8.15	6.92	7.15	1.20	0.68	55.93
1996	2.42	1.71	4.76	1.16	7.61	8.32	5.57	6.03	0.70	3.72	0.20	1.64	43.84
1997	1.19	3.02	1.67	5.47	4.98	6.76	6.29	4.40	9.16	0.68	4.46	7.60	55.68
1998	5.65	8.28	5.39	0.95	3.94	0.90	7.08	6.22	8.73	2.90	5.16	0.94	56.14
1999	2.29	0.27	0.76	3.48	6.52	10.89	5.34	14.31	8.93	3.86	1.19	2.26	60.10
2000	1.15	0.37	2.00	1.92	1.17	3.76	5.06	1.94	7.95	1.37	0.24	0.38	27.31
Mean	2.35	2.54	3.37	2.13	3.92	8.17	7.77	7.26	6.45	3.14	1.92	1.89	50.91

Table 5. Monthly and Mean Rainfall (inches) at Brooks Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1963	2.41	7.67	2.03	0.63	8.05	7.71	3.15	5.19	3.35	1.20	9.69	2.63	53.71
1964	4.85	3.86	3.38	1.23	2.67	5.03	9.55	5.87	6.28	2.88	0.97	1.26	47.83
1965	1.64	5.42	1.44	1.75	0.36	9.56	11.21	7.41	7.42	3.21	0.68	2.74	52.84
1966	5.95	6.90	0.75	1.36	5.40	8.86	3.46	5.03	9.73	0.69	0.32	1.21	49.66
1967	2.02	3.57	1.07	0.00	0.18	5.76	11.38	9.97	6.54	0.46	0.04	2.84	43.83
1968	0.19	2.36	1.34	0.54	5.88	19.87	4.72	3.23	4.56	3.46	3.26	0.38	49.79
1969	4.65	1.38	5.93	1.99	2.09	4.45	7.67	9.03	5.60	5.64	1.77	4.98	55.18
1970	2.61	2.73	5.76	0.73	5.49	3.03	9.34	2.06	4.54	2.24	0.24	0.91	39.68
1971	0.17	3.83	1.65	0.88	2.93	5.46	6.34	5.24	1.92	6.01	2.13	2.36	38.92
1972	1.48	4.42	2.68	2.17	3.27	11.22	7.20	10.10	0.59	0.87	2.44	2.24	48.68
1973	3.41	2.74	2.40	1.83	5.03	2.95	5.08	4.74	9.28	3.86	0.75	2.01	44.08
1974	0.25	0.57	1.21	0.82	3.25	15.05	15.74	9.27	9.42	0.86	0.14	1.86	58.44
1975	0.93	1.79	0.70	1.30	7.57	4.41	8.19	3.34	7.25	1.41	0.95	0.63	38.47
1976	0.43	0.51	2.20	1.97	6.06	11.51	3.28	8.89	8.20	2.71	0.66	2.94	49.36
1977	2.58	1.94	0.78	0.26	1.52	1.85	9.36	10.03	5.92	1.65	2.26	2.99	41.14
1978	2.69	4.98	1.92	0.17	2.68	7.65	7.95	6.81	2.89	2.06	0.77	3.75	44.32
1979	6.22	1.13	1.93	1.37	6.46	3.59	6.45	8.32	12.68	1.64	2.02	1.36	53.17
1980	2.48	2.44	1.66	2.52	8.30	2.13	4.34	4.55	5.87	1.23	2.33	3.31	41.16
1981	0.50	4.85	2.02	0.24	3.20	10.49	6.12	10.89	5.88	3.74	3.89	2.20	54.02
1982	1.73	1.37	5.70	3.23	4.68	12.93	11.02	7.22	8.04	1.34	1.20	1.71	60.17
1983	2.06	9.47	5.41	3.19	1.34	9.10	5.08	4.46	5.00	5.47	2.05	5.27	57.90
1984	1.22	3.99	1.09	3.52	5.31	5.77	12.20	2.31	6.01	0.85	2.86	0.31	45.44
1985	0.63	0.70	3.53	2.31	2.61	6.35	5.83	8.58	6.56	1.28	1.17	3.30	42.85
1986	4.83	2.89	2.61	0.35	2.14	6.47	6.46	9.42	3.71	2.89	1.67	3.59	47.03
1987	3.55	2.51	11.62	0.18	4.45	2.87	8.24	0.75	6.64	4.66	8.89	0.00	54.36
1988	3.83	1.61	9.12	0.55	2.87	2.21	0.00	8.54	6.00	1.82	5.85	1.02	43.42
1989	3.96	0.04	2.51	2.44	3.39	10.33	5.58	10.51	4.77	1.93	2.36	5.48	53.30
1990	0.12	4.54	1.99	1.48	3.25	3.71	8.76	5.73	1.95	4.14	3.15	0.72	39.54
1991	1.89	0.48	4.83	6.61	7.39	4.90	6.35	4.96	4.70	3.63	0.16	0.03	45.93
1992	1.00	3.86	1.75	5.75	0.93	14.05	5.04	8.61	6.60	2.48	4.40	0.48	54.95
1993	7.02	0.57	4.21	2.37	0.00	3.52	8.09	4.03	5.96	1.49	2.30	0.96	40.52
1994	5.10	5.22	2.23	5.66	6.85	9.37	6.46	9.06	8.91	6.42	7.23	2.92	75.43
1995	1.44	1.08	1.18	2.40	3.58	6.76	9.76	16.08	5.05	5.85	1.71	0.58	55.47
Mean	2.54	3.07	2.99	1.87	3.91	7.24	7.25	6.98	5.99	2.73	2.43	2.09	49.11

Table 6. Monthly and Mean Rainfall (inches) at Fort Drum Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.38	3.55	4.71	0.64	0.05	4.55	8.13	5.72	5.94	7.77	0.69	1.61	43.74
1966	4.34	4.10	0.85	2.01	7.37	8.24	4.59	6.95	5.71	3.29	0.82	0.39	48.66
1967	0.31	3.88	1.10	0.00	0.47	8.98	12.18	5.13	6.31	1.30	0.77	2.20	42.63
1968	0.93	1.82	0.63	0.25	3.63	14.21	12.68	2.28	2.36	7.46	2.27	0.46	48.98
1969	2.63	1.46	7.11	3.84	4.89	2.42	3.88	10.72	4.00	11.09	2.89	2.08	57.01
1970	4.74	3.52	4.93	0.07	2.21	3.62	4.82	3.51	4.57	2.96	0.11	0.86	35.92
1971	0.11	3.38	1.62	0.53	5.28	12.60	10.44	5.14	6.90	4.27	0.41	1.40	52.08
1972	1.09	4.59	3.17	1.60	6.95	8.66	4.41	9.02	2.09	1.73	3.10	1.68	48.09
1973	4.97	2.52	2.83	2.24	6.41	10.40	13.83	7.07	7.81	2.89	1.24	1.70	63.91
1974	1.02	1.83	0.08	2.50	3.63	10.63	10.54	10.90	8.09	2.46	0.78	1.48	53.94
1975	0.18	1.89	2.22	1.24	10.66	4.71	15.95	4.22	6.39	5.43	1.31	1.00	55.20
1976	0.35	0.62	1.08	3.03	14.52	7.05	7.39	4.44	10.16	0.65	1.48	3.49	54.26
1977	1.10	1.23	0.53	0.55	3.14	6.41	6.24	8.62	7.13	0.84	5.00	4.29	45.08
1978	1.19	2.80	3.34	0.14	6.36	12.09	9.98	5.34	7.96	1.83	2.83	3.34	57.20
1979	6.82	0.77	0.98	2.91	14.33	1.74	5.69	3.80	22.40	0.77	0.89	1.80	62.89
1980	2.52	2.92	3.89	3.36	2.76	6.13	4.38	3.18	2.92	0.79	2.66	2.02	37.53
1981	0.33	3.35	1.85	0.20	1.54	4.29	4.08	8.82	3.54	2.43	1.52	0.79	32.74
1982	1.12	2.92	6.86	5.47	5.55	8.42	8.80	9.20	5.76	2.44	2.93	1.79	61.26
1983	4.02	7.60	5.20	1.15	1.48	10.85	7.20	10.68	4.65	4.46	2.38	4.62	64.29
1984	0.45	4.24	2.41	1.78	5.23	4.53	9.35	9.08	5.63	0.57	3.81	1.52	48.60
1985	0.53	0.40	2.99	2.49	1.75	5.11	7.48	7.38	14.89	2.38	1.17	1.18	47.75
1986	2.97	0.46	2.92	0.00	1.94	12.48	8.15	5.63	2.99	9.09	0.98	2.63	50.23
1987	4.82	0.68	11.61	0.38	3.79	6.82	5.20	1.66	8.14	3.45	6.77	0.01	53.34
1988	2.95	2.98	4.86	1.10	1.81	8.05	7.33	6.52	2.00	0.84	2.95	0.60	41.99
1989	2.98	1.05	5.27	3.22	1.07	6.96	3.16	9.58	9.12	8.25	1.10	3.06	54.83
1990	0.00	4.35	1.10	2.02	4.20	10.65	10.93	6.97	6.37	5.07	0.00	0.00	51.67
1991	4.86	3.27	5.73	9.60	7.55	14.26	13.17	6.43	6.13	2.62	0.00	0.00	73.62
1992	2.31	3.49	1.34	3.87	0.33	23.50	6.10	11.79	6.26	5.33	5.12	2.17	71.60
1993	8.75	2.19	9.00	3.78	4.30	4.68	5.59	6.60	3.94	10.24	2.80	3.60	65.46
1994	4.35	4.61	0.82	7.07	1.50	10.69	4.79	8.22	7.00	2.57	6.43	3.53	61.60
1995	4.15	4.24	5.13	3.10	2.85	6.55	10.04	14.31	8.35	9.11	1.20	0.67	69.70
1996	4.56	1.90	17.96	2.41	9.32	8.78	5.16	14.02	1.65	6.85	1.26	2.68	76.55
1997	3.98	0.75	1.90	6.67	4.45	11.20	5.80	13.91	7.23	1.73	2.70	7.92	68.23
1998	4.35	5.88	10.18	3.00	1.78	2.05	17.22	8.85	10.69	5.39	6.75	0.30	76.45
1999	2.15	1.15	0.25	2.55	6.94	13.49	4.02	9.69	8.62	13.88	1.90	0.70	65.35
2000	3.50	0.30	1.52	3.52	0.30	3.27	6.80	8.74	4.92	1.90	0.00	0.93	35.70
Mean	2.66	2.69	3.83	2.45	4.45	8.31	7.93	7.61	6.63	4.28	2.19	1.90	54.95

Table 7. Monthly and Mean Rainfall (inches) at Kissimmee Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	1.69	4.62	2.20	1.05	0.00	8.40	8.47	4.15	4.72	2.11	0.93	2.62	40.96
1966	5.16	7.07	0.45	1.93	4.39	9.82	5.11	7.04	6.10	2.25	0.12	1.68	51.12
1967	0.78	4.14	0.55	0.04	0.45	9.71	10.68	6.41	7.08	0.25	0.08	2.90	43.07
1968	0.27	3.10	0.88	0.47	5.02	15.42	9.38	4.74	3.56	3.12	2.65	0.31	48.92
1969	2.20	1.89	5.76	2.73	3.00	3.69	4.57	6.59	13.07	6.21	1.75	4.59	56.05
1970	2.73	3.09	5.59	1.09	4.43	4.95	9.04	3.89	2.97	2.07	0.82	1.21	41.88
1971	0.40	4.10	3.25	0.82	3.37	3.12	3.97	6.67	3.21	8.05	1.13	1.37	39.46
1972	0.88	3.90	1.22	1.65	2.64	7.44	5.08	8.59	0.96	2.13	3.90	2.45	40.84
1973	4.89	2.38	2.42	2.19	4.39	6.42	8.20	7.99	11.65	0.98	0.70	1.90	54.11
1974	0.32	1.23	2.10	0.67	2.48	11.93	6.62	4.07	4.22	0.38	1.06	1.63	36.71
1975	0.76	1.48	0.88	3.28	7.56	7.86	6.79	5.27	9.18	5.87	0.72	0.42	50.07
1976	0.20	0.40	2.26	1.43	7.70	5.89	4.09	6.80	4.52	0.94	1.77	4.08	40.08
1977	1.64	2.01	2.06	0.23	2.15	3.03	5.69	12.69	7.47	1.96	4.38	5.04	48.35
1978	3.02	3.36	1.69	0.25	2.63	9.01	10.20	6.77	1.20	1.90	0.26	3.19	43.48
1979	6.42	1.57	2.48	1.92	10.91	2.85	3.29	7.32	12.52	0.12	1.71	1.45	52.56
1980	2.22	2.51	2.33	3.43	5.85	1.48	3.86	2.99	1.32	0.58	3.94	0.45	30.96
1981	0.22	5.08	1.59	0.11	3.34	9.51	2.91	8.71	6.15	4.47	1.73	3.07	46.89
1982	1.75	1.53	5.81	3.28	4.04	2.60	9.34	4.33	8.28	2.41	0.70	1.03	45.10
1983	1.92	9.62	6.11	2.45	1.94	7.57	8.58	5.32	5.48	8.84	1.44	4.64	63.91
1984	2.20	3.22	1.70	1.15	5.50	2.88	10.53	8.96	3.09	1.11	2.12	0.15	42.61
1985	1.17	0.96	4.15	0.73	4.32	6.32	7.06	6.68	7.99	2.87	0.86	2.62	45.73
1986	4.44	1.94	3.08	0.45	0.56	6.00	4.63	8.36	3.15	3.99	0.84	3.20	40.64
1987	2.92	1.91	12.11	0.53	2.65	4.87	5.98	4.01	6.06	4.09	10.26	0.44	55.83
1988	2.95	1.99	3.56	1.05	3.23	5.15	15.73	10.55	4.79	0.89	8.29	1.06	59.24
1989	3.10	0.07	2.39	1.84	2.89	6.29	6.93	8.39	7.22	2.57	1.69	6.96	50.34
1990	1.49	5.45	1.91	1.81	0.99	5.29	8.19	7.65	6.44	4.47	0.74	0.81	45.24
1991	1.87	0.41	6.12	5.09	8.58	6.96	10.13	6.11	4.88	2.72	0.25	0.37	53.49
1992	1.36	3.09	2.01	5.65	3.30	7.91	2.75	10.73	9.91	3.85	3.19	0.53	54.28
1993	3.63	1.81	6.41	3.08	1.36	5.66	2.74	1.67	4.94	5.79	0.26	0.94	38.29
1994	4.41	3.78	1.34	5.97	5.05	11.49	6.84	8.78	11.29	3.68	7.25	3.13	73.01
1995	1.78	1.75	1.46	2.91	0.99	6.52	9.66	9.91	7.94	4.93	0.96	0.75	49.56
1996	6.97	2.97	9.85	1.83	2.91	9.19	2.77	7.37	7.08	2.48	0.62	2.75	56.79
1997	2.42	2.65	1.77	4.41	2.05	5.72	9.81	10.76	2.58	5.39	5.96	10.01	63.53
1998	1.91	7.84	6.13	1.09	1.30	2.18	5.99	5.08	7.69	0.79	2.39	0.87	43.26
1999	2.72	1.99	0.78	2.34	8.37	8.41	2.22	11.04	5.52	5.57	2.46	0.85	52.27
2000	1.79	0.9	0.53	1.11	2.1	7	9.24	6.6	5.92	1.2	0.88	1.0746	38.345
Mean	2.35	2.94	3.19	1.95	3.68	6.63	6.86	7.03	6.12	3.08	2.19	2.24	48.25

Table 8. Monthly and Mean Rainfall (inches) at DeSoto City (Lake Placid) Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	1.29	0.46	2.25	4.88	0.18	8.79	5.88	2.43	9.19	4.11	1.13	0.96	41.55
1966	2.94	8.22	0.87	0.04	2.97	4.25	2.20	5.93	13.75	1.69	0.16	0.08	43.11
1967	0.63	2.01	0.31	0.00	0.00	10.36	3.43	5.78	1.78	1.36	0.46	3.28	29.40
1968	0.16	1.35	0.12	0.00	4.27	15.31	4.26	1.56	1.31	3.94	3.06	0.16	35.50
1969	0.58	1.64	8.60	1.50	1.74	4.55	1.63	12.68	10.33	4.87	1.89	3.53	53.54
1970	7.85	3.41	7.61	0.00	1.62	7.34	6.06	1.69	4.77	2.47	0.00	0.31	43.13
1971	0.52	2.66	4.32	1.17	4.95	5.09	5.68	9.45	6.77	4.70	1.39	1.50	48.20
1972	2.23	3.34	4.60	0.64	3.94	10.01	8.43	8.26	0.41	3.38	5.55	2.08	52.87
1973	6.85	1.35	2.06	2.86	3.11	6.74	6.50	10.09	6.36	1.28	1.80	1.54	50.54
1974	0.59	2.17	0.26	0.44	6.66	13.89	9.69	7.42	5.99	0.28	0.60	2.47	50.46
1975	0.48	1.38	1.11	1.91	8.98	10.56	6.45	8.54	9.36	1.86	0.49	0.46	51.58
1976	0.31	1.78	1.39	1.19	5.93	11.04	11.30	7.63	11.08	1.65	2.93	1.45	57.68
1977	1.69	1.06	1.51	0.70	1.02	4.10	8.99	4.99	5.57	1.59	4.35	3.69	39.26
1978	2.20	3.45	2.66	0.21	4.60	5.88	15.17	2.87	1.89	4.08	1.25	2.48	46.74
1979	9.40	1.38	2.19	2.53	5.20	6.79	6.74	7.99	13.35	0.18	1.29	1.83	58.87
1980	3.76	2.53	2.14	3.54	5.21	2.40	6.38	1.52	3.64	3.05	3.08	1.19	38.45
1981	0.27	4.42	0.97	0.35	3.54	4.50	3.49	12.75	6.98	1.43	1.76	0.17	40.63
1982	1.74	1.97	7.09	3.71	6.47	18.54	13.64	6.24	6.97	1.15	1.81	1.09	70.42
1983	3.01	10.54	4.85	2.48	1.13	8.08	4.55	4.40	3.13	3.27	2.23	4.31	51.98
1984	0.50	3.93	4.44	2.61	7.77	5.11	8.96	5.32	4.11	0.27	3.46	0.77	47.25
1985	0.65	0.54	2.24	2.23	2.14	7.24	7.66	7.62	9.28	2.66	2.00	0.77	45.03
1986	1.66	1.82	6.96	0.24	1.66	14.15	3.41	4.86	7.06	1.93	1.67	1.76	47.18
1987	3.77	1.06	6.23	0.18	0.81	5.24	5.11	3.53	6.38	5.97	4.17	1.06	43.51
1988	3.41	2.76	4.20	0.17	3.71	5.75	7.18	3.47	4.67	0.40	3.47	1.15	40.34
1989	2.25	0.92	2.71	3.65	2.55	4.65	4.81	10.85	8.24	4.65	0.69	2.88	48.85
1990	0.33	4.05	3.14	2.30	1.52	7.52	6.83	11.74	3.36	1.04	0.68	1.14	43.65
1991	4.42	1.94	3.05	3.10	4.94	11.43	10.22	6.39	2.91	3.19	1.32	0.45	53.36
1992	0.76	4.53	2.50	3.81	0.55	13.56	3.95	12.12	2.59	1.71	3.97	0.60	50.65
1993	6.70	3.85	5.21	4.14	1.56	8.55	6.03	7.25	7.89	5.59	0.42	0.90	58.09
1994	2.83	1.73	1.49	4.17	2.19	9.75	4.74	7.28	11.65	2.44	2.27	3.11	53.65
1995	2.26	2.25	1.93	4.09	1.13	8.22	5.76	7.99	6.73	8.90	1.75	0.52	51.53
1996	3.13	0.83	3.55	0.84	5.88	8.24	2.45	3.27	4.05	3.86	0.59	0.88	37.56
1997	1.58	0.94	1.87	8.42	3.10	9.16	8.25	7.02	7.47	0.71	7.76	6.25	62.53
1998	3.87	6.54	9.53	2.54	3.99	2.60	8.59	6.85	12.77	0.73	8.05	0.39	66.44
1999	2.71	0.96	1.44	1.57	5.69	16.37	5.41	11.28	4.98	5.96	1.07	1.33	58.77
2000	1.30	0.31	1.27	3.74	0.29	4.77	5.36	2.92	11.47	1.54	0.67	0.77	34.41
Mean	2.46	2.61	3.24	2.11	3.36	8.35	6.53	6.72	6.62	2.72	2.20	1.59	48.52

Table 9. Monthly and Mean Rainfall (inches) at Moore Haven Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.42	3.59	3.16	1.76	1.11	10.16	5.57	2.78	4.71	9.06	0.34	1.89	44.55
1966	5.47	3.67	0.42	3.01	5.97	9.26	10.93	11.19	6.76	2.62	0.11	0.40	59.81
1967	0.84	1.69	0.24	0.14	2.58	11.27	7.02	3.74	8.53	3.37	0.08	1.95	41.45
1968	0.58	1.72	1.03	0.85	8.64	10.73	7.13	4.23	6.81	3.21	2.25	0.21	47.39
1969	1.76	2.28	6.19	0.69	4.10	10.09	3.68	10.04	8.49	11.75	1.46	3.82	64.35
1970	3.55	2.40	12.63	0.02	2.98	8.74	5.91	7.35	3.46	4.70	0.13	0.28	52.15
1971	0.25	0.51	0.37	0.14	1.50	13.86	7.28	8.29	7.18	6.35	0.90	1.20	47.83
1972	0.30	1.55	2.24	2.34	7.52	10.50	2.77	6.40	0.93	0.40	2.21	1.39	38.55
1973	2.72	2.73	3.34	1.02	5.88	10.48	8.01	5.58	8.43	1.38	0.03	1.52	51.12
1974	0.14	1.36	0.08	0.97	3.00	14.91	18.56	7.99	5.91	1.35	1.64	1.71	57.62
1975	0.20	1.95	0.74	1.22	4.89	5.29	7.00	3.13	11.11	4.88	0.27	0.38	41.06
1976	0.65	1.41	1.59	1.81	4.43	3.10	9.98	12.31	5.74	0.80	1.88	1.55	45.25
1977	4.87	1.38	1.12	0.20	5.17	3.74	6.19	5.51	6.29	1.01	5.33	4.74	45.55
1978	1.78	1.39	2.64	2.06	8.38	5.43	9.32	2.67	6.40	2.23	2.13	4.39	48.82
1979	5.83	0.23	2.30	0.84	7.64	1.09	1.45	5.66	17.69	2.06	1.83	1.96	48.58
1980	2.76	1.08	2.32	5.29	2.23	3.10	7.58	7.61	6.88	1.47	2.20	0.62	43.14
1981	0.87	1.52	1.28	0.38	2.06	3.33	3.70	10.29	4.54	0.24	1.27	0.15	29.63
1982	0.55	2.81	6.70	3.04	10.13	11.07	10.81	3.09	4.70	5.38	0.26	0.76	59.30
1983	4.22	8.04	5.57	1.75	0.38	7.46	4.36	5.95	3.36	4.29	1.61	2.78	49.77
1984	0.33	4.06	5.20	2.63	6.50	4.92	11.34	6.32	2.84	0.46	2.97	0.09	47.66
1985	0.54	0.41	2.11	7.04	1.11	4.51	8.52	5.34	6.17	1.88	1.41	3.25	42.29
1986	2.34	1.07	6.36	0.24	1.59	12.04	3.59	7.89	6.29	4.91	0.41	2.41	49.14
1987	3.65	1.94	6.59	0.00	1.33	4.18	6.42	3.77	9.91	6.06	8.53	0.59	52.97
1988	1.52	2.57	2.92	0.76	1.54	2.87	6.35	5.81	1.62	0.80	4.15	0.72	31.63
1989	1.62	0.10	2.76	5.02	1.62	5.76	6.45	3.01	8.33	2.93	0.35	2.19	40.14
1990	0.04	2.79	0.68	3.03	2.57	5.47	9.23	10.82	2.77	3.02	0.88	0.39	41.69
1991	5.57	0.90	3.93	4.47	6.58	6.18	6.93	8.02	3.05	4.90	1.85	0.33	52.71
1992	1.06	3.73	3.55	1.45	0.71	24.10	2.40	9.47	1.41	1.31	1.63	0.61	51.43
1993	4.72	2.01	2.54	2.15	2.38	3.98	3.19	5.28	5.60	5.05	1.01	1.04	38.95
1994	3.32	3.12	3.37	2.23	5.26	6.99	5.07	3.91	12.38	3.70	3.79	4.99	58.13
1995	2.97	2.89	5.52	3.57	2.23	7.56	15.02	7.33	4.72	10.69	0.24	0.30	63.04
1996	3.04	0.87	3.53	0.92	7.45	7.60	3.89	6.27	0.75	3.19	0.38	0.73	38.62
1997	0.92	1.05	1.88	6.32	4.22	3.69	4.32	10.28	8.10	0.38	2.24	5.04	48.44
1998	1.02	7.59	4.59	0.24	1.13	4.15	2.86	14.22	8.37	2.18	4.15	1.68	52.18
1999	3.75	0.20	0.19	1.51	3.15	14.57	7.10	6.96	13.05	4.20	0.48	1.07	56.23
2000	0.74	0.78	1.67	2.57	0.62	7.62	5.77	0.40	8.08	2.87	0.24	0.57	31.93
Mean	2.08	2.15	3.09	1.99	3.85	7.77	6.82	6.64	6.43	3.47	1.68	1.60	47.59

Table 10. Monthly and Mean Rainfall (inches) at Mountain Lake Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	2.01	4.39	2.82	2.26	0.13	9.75	10.34	4.48	5.26	3.59	0.48	2.03	47.54
1966	7.16	5.60	1.71	2.79	6.43	6.44	4.55	10.84	5.84	0.54	0.02	2.30	54.22
1967	0.84	3.91	1.16	0.00	0.38	11.11	6.86	14.22	3.58	0.76	0.23	2.94	45.99
1968	0.47	1.98	0.84	0.45	7.53	13.24	7.65	6.18	6.91	2.11	2.74	0.12	50.22
1969	5.26	1.53	6.43	0.90	2.53	6.58	5.06	6.93	5.91	6.32	2.85	4.15	54.45
1970	2.89	2.08	5.74	0.48	4.14	5.52	9.17	5.82	3.94	1.32	0.48	1.11	42.69
1971	0.13	4.48	1.76	0.82	3.42	4.42	8.27	4.62	2.53	5.55	2.13	1.33	39.47
1972	1.09	5.26	2.64	1.69	3.25	6.72	4.63	7.37	1.86	1.89	2.07	2.84	41.31
1973	7.15	2.35	5.72	4.41	4.42	4.96	14.76	7.72	9.65	1.16	1.45	1.65	65.40
1974	0.29	1.20	0.56	0.86	2.07	11.84	11.97	6.74	8.21	0.09	0.18	1.80	45.81
1975	0.76	2.04	0.93	0.85	4.08	5.55	5.94	12.02	6.32	5.63	0.99	0.49	45.60
1976	0.29	0.85	1.16	2.30	9.65	10.91	5.76	8.90	9.18	1.20	3.25	2.59	56.04
1977	2.22	1.68	1.59	0.20	2.28	5.50	9.60	10.20	4.69	1.95	2.38	3.34	45.63
1978	2.73	3.65	2.77	0.67	7.62	10.09	9.95	3.78	2.78	1.05	0.50	3.42	49.01
1979	6.51	1.05	1.92	1.41	11.99	8.56	4.04	7.54	15.80	0.04	2.58	1.91	63.35
1980	3.87	2.65	1.96	1.57	6.65	3.04	6.44	4.77	2.41	1.57	3.89	1.11	39.93
1981	0.36	3.78	1.02	0.00	2.26	3.86	6.84	5.73	6.01	0.34	0.95	1.62	32.77
1982	1.31	1.03	7.73	3.90	8.44	11.93	9.50	6.03	8.34	1.21	0.33	1.02	60.77
1983	2.83	9.39	6.37	2.37	1.71	8.51	7.41	3.78	4.72	4.94	4.33	7.80	64.16
1984	0.75	3.32	2.80	1.33	5.52	3.66	11.16	4.65	3.51	0.41	1.61	0.25	38.97
1985	0.75	0.53	2.28	2.36	3.11	8.39	7.72	7.43	8.26	2.30	1.44	1.07	45.64
1986	2.86	1.80	5.52	0.52	0.45	18.65	5.72	8.36	3.22	3.77	0.14	5.80	56.81
1987	2.36	1.49	9.05	1.05	2.85	5.91	4.71	5.39	6.49	5.25	8.98	0.10	53.63
1988	2.60	1.73	5.31	1.02	3.17	4.67	8.99	8.31	4.94	0.80	4.40	0.90	46.84
1989	2.72	0.04	2.77	2.06	3.11	4.99	8.22	5.15	5.10	2.19	3.75	3.84	43.94
1990	0.16	3.57	1.32	2.15	4.68	6.37	8.21	5.00	2.69	4.55	1.65	1.25	41.60
1991	2.03	1.06	4.43	5.02	8.28	6.54	9.31	5.41	1.27	4.52	1.04	0.68	49.59
1992	1.31	3.81	0.84	4.57	3.03	9.08	3.20	11.79	7.00	4.45	3.50	0.76	53.35
1993	5.78	3.55	4.56	4.20	2.36	3.29	5.85	3.82	6.75	3.37	0.31	1.03	44.86
1994	4.20	2.33	2.28	1.84	1.97	12.19	6.06	4.32	11.42	4.04	3.99	3.31	57.95
1995	2.14	2.03	1.43	4.26	1.35	9.56	9.20	8.54	10.90	3.07	2.40	0.41	55.29
1996	5.61	0.45	5.72	1.69	2.22	12.60	5.02	8.61	4.08	3.33	0.90	2.90	53.13
1997	1.33	0.93	2.82	5.21	2.65	6.09	9.29	6.84	3.16	2.88	3.54	6.50	51.24
1998	2.95	6.55	4.81	0.33	0.89	0.20	6.37	5.13	7.38	0.28	2.08	1.06	38.03
1999	3.34	0.50	0.62	1.69	4.31	10.86	3.18	4.44	3.20	4.88	1.27	2.17	40.46
2000	0.88	0.24	1.10	0.72	0.02	6.39	7.22	6.78	4.47	0.85	0.73	0.13	29.53
Mean	2.50	2.58	3.12	1.89	3.86	7.72	7.45	6.88	5.77	2.56	2.04	2.10	48.48

Table 11. Monthly and Mean Rainfall (inches) at Okeechobee Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	0.34	4.99	2.89	2.03	0.84	6.37	5.20	5.71	3.75	6.22	1.10	0.95	40.39
1966	4.32	3.83	1.56	3.38	3.16	12.93	8.74	7.55	7.04	4.71	0.28	0.51	58.01
1967	1.22	2.64	0.30	0.17	0.17	7.19	7.27	4.39	4.77	3.82	0.07	1.13	33.14
1968	0.46	2.01	0.85	0.29	6.75	16.47	6.99	2.81	7.32	5.07	1.57	0.00	50.59
1969	3.82	1.43	5.08	1.98	6.69	4.08	6.64	5.20	3.71	7.83	3.41	2.87	52.74
1970	4.92	3.14	7.21	0.00	4.83	8.48	7.21	7.12	5.10	7.72	0.04	0.87	56.64
1971	0.32	0.95	2.29	0.48	2.49	8.01	6.95	6.44	6.27	5.24	1.73	2.28	43.44
1972	1.24	4.06	2.82	3.52	5.41	9.34	5.26	6.72	2.42	2.92	3.98	2.09	49.76
1973	4.91	2.82	3.01	2.87	5.18	7.33	9.10	6.99	8.39	3.87	1.06	2.02	57.55
1974	1.16	1.31	0.97	1.76	4.10	11.46	11.08	7.35	5.70	2.02	0.79	1.97	49.66
1975	0.25	3.30	0.55	0.58	5.79	2.25	6.63	1.60	4.47	1.16	1.09	0.21	27.88
1976	0.20	1.32	0.59	1.70	6.14	5.62	3.54	6.52	5.32	1.02	2.08	2.00	36.05
1977	2.01	0.60	0.69	1.02	1.34	5.30	4.24	4.75	3.08	1.35	4.24	3.09	31.71
1978	1.90	1.31	3.18	1.87	1.73	5.58	6.35	7.81	6.82	3.04	1.69	4.71	45.99
1979	5.00	0.32	2.45	1.51	12.95	1.29	6.15	8.18	14.10	1.60	1.93	1.87	57.35
1980	3.28	1.49	2.22	6.71	5.28	4.84	6.90	7.32	5.60	2.10	3.92	1.41	51.08
1981	0.99	2.45	0.79	0.50	2.37	2.70	2.92	11.58	8.88	0.97	1.86	0.13	36.14
1982	0.80	2.72	9.23	4.69	4.38	6.09	3.94	10.20	7.42	3.81	3.78	0.76	57.82
1983	4.02	7.78	3.82	1.58	3.01	6.09	6.71	5.66	4.48	8.92	1.39	2.88	56.34
1984	0.14	2.59	3.00	3.10	5.15	4.92	10.60	3.94	4.46	1.36	3.03	0.60	42.89
1985	0.23	0.15	2.77	2.78	0.78	5.99	7.92	7.01	5.24	1.93	0.78	2.01	37.59
1986	1.02	0.35	3.50	0.09	3.22	7.52	5.74	5.82	7.18	4.47	2.75	2.90	44.56
1987	3.46	1.61	4.68	0.50	3.57	7.93	5.77	1.47	5.48	5.37	7.35	0.96	48.15
1988	3.29	3.46	3.39	0.65	5.28	6.89	7.19	8.78	1.68	1.55	3.22	1.10	46.48
1989	1.30	0.53	2.92	3.61	0.83	1.52	6.86	6.87	6.68	6.99	0.95	2.97	42.03
1990	0.58	1.90	0.35	2.67	4.04	4.62	11.37	9.74	3.78	6.09	1.16	0.48	46.78
1991	4.87	1.38	4.95	6.37	3.72	5.15	8.06	7.93	7.78	1.80	2.67	1.25	55.93
1992	1.35	3.25	1.83	2.53	1.06	18.82	4.09	7.49	4.27	2.49	3.32	0.69	51.19
1993	8.41	2.92	6.04	1.15	1.54	4.59	2.00	6.50	5.45	4.73	1.92	0.83	46.08
1994	3.15	4.43	2.61	6.22	3.98	3.81	4.97	11.53	6.50	4.25	4.92	4.49	60.86
1995	2.68	1.45	3.55	2.25	2.14	10.58	5.64	7.00	8.15	12.80	0.41	0.69	57.33
1996	3.83	1.37	10.64	1.74	6.31	7.83	4.92	6.52	4.19	5.95	1.07	2.24	56.60
1997	2.94	1.79	2.60	6.84	13.17	7.70	5.26	4.55	6.75	2.19	5.80	5.55	65.15
1998	3.06	6.02	4.85	1.73	2.25	3.22	8.09	9.47	7.30	4.62	5.27	1.05	56.93
1999	2.92	0.56	1.03	3.96	5.82	13.73	6.47	3.46	7.40	4.65	1.33	1.42	52.74
2000	1.12	0.97	1.29	3.05	0.11	2.82	3.52	2.51	8.76	0.66	0.12	0.50	25.43
Mean	2.38	2.31	3.07	2.39	4.04	6.92	6.40	6.51	5.99	4.04	2.28	1.71	48.03

Table 12. Monthly and Mean Rainfall (inches) at Orlando Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	1.85	4.34	2.84	1.32	0.35	8.11	9.83	6.25	4.48	3.81	0.97	2.50	46.65
1966	4.69	5.61	1.49	2.57	5.08	10.86	5.76	7.01	7.81	2.20	0.35	1.24	54.68
1967	1.27	4.31	0.83	0.08	1.69	8.98	9.67	10.10	5.63	0.73	0.16	2.41	45.87
1968	0.58	2.59	1.66	0.57	4.92	14.91	7.56	6.90	4.02	5.32	3.04	1.03	53.10
1969	2.15	2.61	5.73	1.97	2.90	4.18	6.36	8.58	8.52	8.22	2.02	4.81	58.04
1970	3.92	3.87	5.22	1.23	3.92	4.86	7.00	5.91	4.39	3.09	0.81	1.21	45.41
1971	1.17	4.87	2.31	1.50	3.65	5.27	6.91	6.68	4.13	5.86	1.77	2.21	46.34
1972	1.46	4.74	4.43	1.58	4.37	6.84	5.00	9.79	1.83	3.14	5.46	2.38	51.01
1973	4.84	2.47	3.83	2.95	4.33	4.99	8.41	7.20	8.76	1.82	0.93	3.19	53.74
1974	0.35	0.63	3.67	1.17	2.69	15.28	6.01	6.56	5.78	0.48	0.31	1.62	44.55
1975	0.98	1.49	1.10	1.36	7.52	9.70	9.26	4.75	4.97	4.74	0.66	0.51	47.04
1976	0.37	0.83	1.72	2.16	10.36	9.93	7.05	3.25	5.87	0.74	2.03	2.77	47.08
1977	1.81	1.76	1.82	0.14	1.47	4.47	6.61	6.28	7.03	0.43	2.60	3.70	38.12
1978	2.49	5.45	2.14	0.61	3.16	10.00	11.92	5.13	4.31	1.51	0.18	3.69	50.59
1979	6.48	1.45	3.24	1.08	7.66	4.00	7.95	5.88	9.19	0.43	1.93	0.94	50.23
1980	2.45	1.64	1.51	4.07	6.96	5.25	5.14	2.92	3.70	0.55	6.55	0.47	41.21
1981	0.21	4.36	1.85	0.18	2.02	12.49	3.53	5.60	8.26	3.13	2.50	2.97	47.10
1982	1.72	1.34	4.85	6.27	5.29	6.06	11.81	5.03	6.96	0.74	0.53	1.01	51.61
1983	2.08	8.32	5.37	3.21	1.77	7.82	6.49	4.83	5.16	3.78	1.36	5.33	55.52
1984	2.01	2.73	1.85	6.21	3.20	5.32	6.19	7.89	6.19	0.56	2.10	0.19	44.44
1985	0.91	1.27	4.59	1.69	3.00	4.54	7.28	11.63	5.45	2.55	0.82	3.46	47.19
1986	7.23	1.84	2.63	0.49	0.88	9.50	5.85	5.99	4.50	5.63	1.69	3.60	49.83
1987	1.27	1.74	11.38	0.59	1.40	3.54	7.95	6.07	8.64	3.41	10.29	0.51	56.79
1988	3.12	1.38	6.07	2.02	2.82	4.17	9.44	7.94	5.67	1.42	7.44	1.00	52.49
1989	3.80	0.15	1.35	2.28	2.38	6.79	4.74	6.20	10.29	1.75	1.44	4.49	45.66
1990	0.23	4.13	1.92	1.73	0.55	6.22	6.68	3.78	2.46	2.10	1.05	0.83	31.68
1991	2.37	0.98	6.66	7.72	9.48	5.98	10.78	7.13	4.53	4.76	0.27	0.24	60.90
1992	1.35	2.42	3.67	9.10	1.19	8.68	2.60	8.03	7.13	5.17	2.74	0.88	52.96
1993	4.89	1.48	6.26	1.78	2.32	4.47	6.49	5.95	5.35	4.61	0.17	0.76	44.53
1994	4.00	3.58	1.21	3.03	2.87	10.28	13.27	6.23	7.84	5.18	7.32	3.04	67.85
1995	1.50	1.13	2.12	0.81	4.24	8.23	5.10	9.48	3.59	4.35	1.74	0.76	43.05
1996	5.39	1.52	9.87	0.68	5.12	6.51	4.06	11.33	6.04	3.28	0.72	2.14	56.66
1997	1.13	2.44	3.46	4.02	3.17	8.20	11.51	7.99	2.59	4.22	3.15	12.63	64.51
1998	1.99	8.74	5.26	0.52	3.17	1.58	8.61	5.59	5.36	0.64	1.67	0.62	43.75
1999	2.99	0.36	0.56	2.40	5.43	13.84	5.14	4.50	6.40	8.40	2.13	2.65	54.80
2000	1.23	0.36	0.45	2.22	1.00	6.19	4.07	4.48	6.37	1.33	1.10	1.58	30.38
Mean	2.40	2.75	3.47	2.26	3.68	7.45	7.28	6.63	5.81	3.06	2.22	2.32	49.32

Table 13. Monthly and Mean Rainfall (inches) at S-65 Rainfall Station.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
1965	1.15	3.56	4.10	2.05	1.28	8.14	12.11	4.95	5.97	4.81	0.91	2.46	51.48
1966	5.56	5.82	1.69	1.49	4.58	5.29	6.87	4.86	4.67	3.14	0.08	0.89	44.94
1967	1.33	2.70	0.22	0.00	0.38	6.61	7.00	7.25	6.65	0.46	0.13	1.89	34.62
1968	0.60	2.03	1.31	0.33	9.16	14.64	5.30	2.98	5.71	7.45	2.39	0.20	52.10
1969	1.85	1.34	7.81	1.89	1.89	6.92	8.32	6.67	9.64	10.17	3.17	3.66	63.33
1970	2.34	2.20	5.41	0.79	3.58	5.60	8.79	3.79	2.48	6.05	0.34	1.00	42.37
1971	0.00	4.77	1.15	0.38	1.07	8.34	8.24	5.41	2.31	5.79	0.41	1.39	39.26
1972	2.99	4.21	2.79	2.47	5.52	8.02	2.74	4.46	0.66	1.37	5.58	3.16	43.97
1973	5.23	1.58	2.58	7.26	5.22	4.42	7.98	6.44	7.05	3.86	0.08	1.69	53.39
1974	0.40	1.86	0.08	3.40	8.17	13.98	20.28	10.97	6.84	0.47	0.32	4.69	71.46
1975	1.08	2.71	2.10	2.38	10.18	5.65	9.00	8.27	7.68	5.19	0.85	0.58	55.65
1976	0.57	0.33	0.94	1.40	5.67	11.65	5.08	14.37	7.13	2.70	1.30	2.99	54.13
1977	2.78	1.48	1.42	0.82	10.18	5.65	9.00	7.17	5.28	1.49	4.01	3.42	52.71
1978	2.30	3.60	2.76	0.29	6.74	13.41	10.14	7.89	6.98	4.98	1.24	3.36	63.69
1979	5.45	1.47	1.52	2.26	10.57	3.94	2.50	7.16	19.52	0.52	1.21	1.33	57.45
1980	2.75	5.29	2.60	3.24	5.02	10.32	6.54	10.41	3.88	1.86	7.96	1.36	61.23
1981	0.49	3.51	1.47	0.30	2.61	6.26	6.66	10.13	11.20	1.16	1.58	0.29	45.66
1982	2.15	3.23	6.43	7.47	7.06	8.68	8.05	2.60	7.97	4.60	0.95	1.49	60.68
1983	4.47	8.08	4.77	2.36	1.96	9.52	3.74	3.74	4.79	4.51	1.90	4.15	53.99
1984	0.77	2.52	2.15	2.35	6.36	4.51	8.88	5.64	2.91	1.10	3.99	0.56	41.74
1985	0.69	0.69	1.45	1.92	3.45	7.21	6.72	5.89	4.16	1.26	3.00	1.69	38.13
1986	2.46	1.52	5.15	0.30	0.97	8.93	6.55	5.92	5.57	1.59	1.46	2.32	42.74
1987	2.80	1.92	8.34	0.26	1.38	7.41	5.72	1.81	8.74	6.70	10.39	0.12	55.59
1988	2.16	2.96	6.31	0.44	1.85	5.36	13.09	8.88	4.76	1.07	2.92	1.82	51.62
1989	3.39	0.60	4.47	2.08	4.68	7.28	5.06	3.46	7.81	1.66	2.04	3.39	45.92
1990	0.38	5.14	0.38	1.13	1.18	7.31	9.55	9.00	4.75	2.66	0.88	0.72	43.08
1991	2.63	1.23	5.68	4.16	6.61	4.71	7.15	7.24	4.25	8.26	0.27	0.82	53.01
1992	0.22	2.80	1.35	4.05	2.06	12.87	8.91	12.00	2.85	2.01	0.75	0.53	50.40
1993	4.15	2.44	4.17	3.39	2.97	0.72	3.17	8.01	5.96	4.00	1.17	0.71	40.86
1994	1.44	3.05	1.48	3.17	1.54	13.34	11.68	4.54	10.44	4.75	4.46	2.63	62.52
1995	1.71	3.61	4.47	3.97	2.18	8.93	4.23	9.60	5.41	5.57	2.88	0.26	52.82
1996	4.67	0.67	5.29	0.97	7.47	7.93	1.59	5.67	3.46	4.38	0.37	2.82	45.29
1997	2.08	1.12	3.48	5.01	5.35	5.05	11.49	9.23	5.99	1.81	10.17	7.44	68.22
1998	4.89	6.70	7.31	0.85	2.47	0.98	9.93	6.09	9.51	1.17	3.06	1.21	54.17
1999	2.58	1.12	1.09	5.12	3.03	7.87	4.07	8.40	7.95	7.98	2.11	2.14	53.46
2000	0.83	0.75	1.82	1.51	2.69	5.79	8.35	3.78	4.42	0.55	0.41	1.13	32.03
Mean	2.26	2.74	3.21	2.26	4.36	7.59	7.62	6.80	6.26	3.53	2.35	1.95	50.94

FREQUENCY ANALYSIS

1-in-10 Year Drought Event

Water supply needs, of existing and future reasonable-beneficial uses, are estimated based upon demand requirements during a 1-in-10 year drought event (Section 373.0361, (2)(a)1 F.S.). A 1-in-10 year drought is a drought of such intensity that it is expected to have a return frequency of once in 10 years. This means that there is only a 10 percent chance that such a small amount of rain will fall in any given year.

Statistical Method

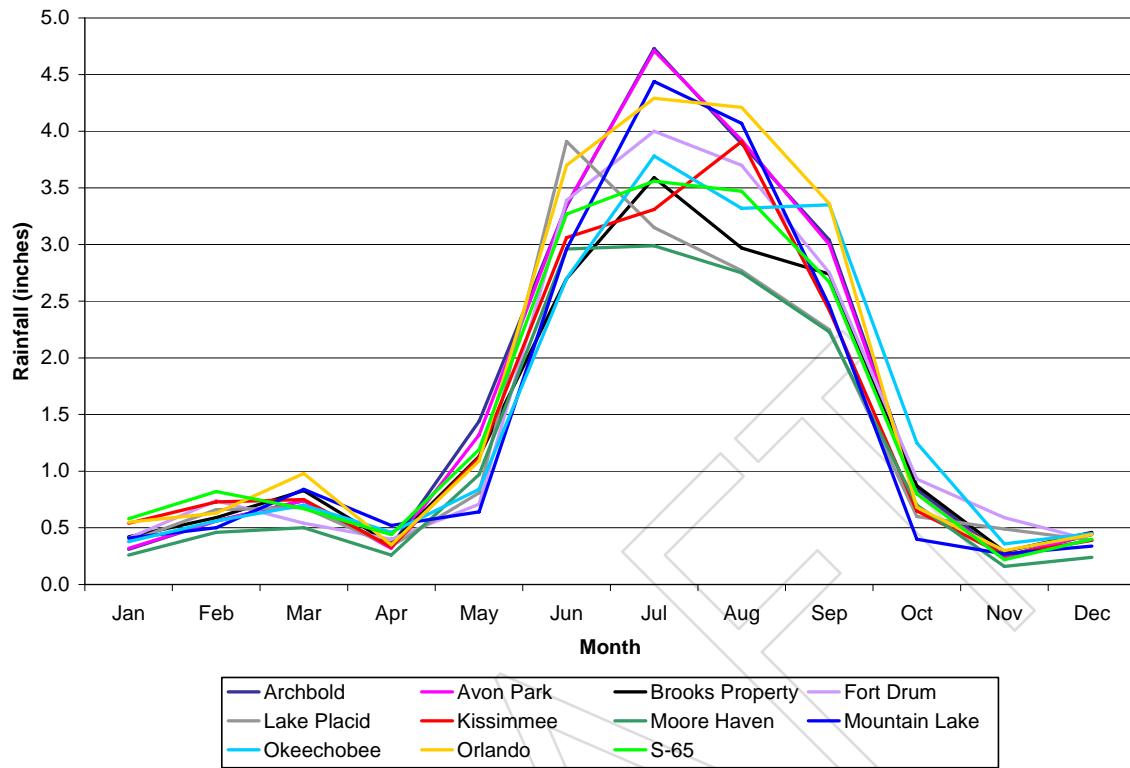
Because of correlations between rainfall amounts in different months, the sum of the 12 monthly 1-in-10 rainfall events will not equal the annual 1-in-10 rainfall event; in almost all cases a 1-in-10 annual drought will be less severe (have more rainfall) than 12 successive monthly 1-in-10 rainfall droughts. The sum of the monthly 1-in-10 drought rainfalls in all cases was less than the annual 1-in-10 drought rainfall.

Attempts to reconcile these 1-in-10 concepts depend upon the assumptions made with respect to the starting month and patterns of serial correlation in rainfall. Based on the results of Abtew and Ali, the gamma distribution was used to estimate 1-in-10 drought levels of rainfall.

Maximum likelihood estimates of monthly and annual 1-in-10 drought rainfalls based on a two-parameter gamma distribution were calculated using Number Cruncher Statistical System™ software. This method consists of finding the values of the distribution parameters that maximize the log-likelihood of the data values. These values provide a high degree of probability that the current set of data values will occur. For a discussion of maximum likelihood estimation, see *Maximum Likelihood Estimation* by S. Purcell of the Statistical Genetics Group at Kings College, London.

For more information on the use of gamma distribution in engineering statistical analysis, see the Engineering Statistics Handbook, Section 1.3.6.6.11 available from: <http://www.itl.nist.gov/div898/handbook/eda/section3/eda366b.htm>.

Figure 3 shows the statistical 1-in-10 year drought event plots for the rainfall stations and **Table 14** lists the values for 1-in-10 year drought events.

**Figure 3.** Statistical 1-in-10 Year Drought Event for Rainfall Stations in the KB Planning Area.**Table 14.** Statistical 1-in-10 Rainfall (in inches) for Stations in the KB Planning Area.

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum	Annual
Archbold	0.3	0.6	0.7	0.3	1.4	3.3	4.7	3.9	3.0	0.8	0.3	0.4	19.9	40.9
Avon Park	0.3	0.6	0.7	0.3	1.3	3.4	4.7	3.9	3.0	0.8	0.2	0.5	19.7	40.9
Brooks Property	0.4	0.6	0.8	0.4	1.1	2.7	3.6	3.0	2.7	0.9	0.3	0.5	17.0	39.8
Fort Drum	0.4	0.7	0.5	0.4	0.7	3.4	4.0	3.7	2.8	0.9	0.6	0.4	18.6	40.5
Desoto City (Lake Placid)	0.4	0.7	0.7	0.3	0.8	3.9	3.2	2.8	2.3	0.6	0.5	0.4	16.4	37.4
Kissimmee	0.5	0.7	0.8	0.3	1.1	3.1	3.3	3.9	2.4	0.7	0.3	0.4	17.5	37.8
Moore Haven	0.3	0.5	0.5	0.3	1.0	3.0	3.0	2.8	2.2	0.7	0.2	0.2	14.5	37.0
Mountain Lake	0.4	0.5	0.8	0.5	0.6	3.0	4.4	4.1	2.5	0.4	0.3	0.3	17.9	37.9
Okeechobee	0.4	0.6	0.7	0.5	0.8	2.7	3.8	3.3	3.4	1.3	0.4	0.5	18.2	35.5
Orlando	0.6	0.6	1.0	0.4	1.1	3.7	4.3	4.2	3.4	0.7	0.3	0.4	20.6	39.5
S-65	0.6	0.8	0.7	0.4	1.2	3.3	3.6	3.5	2.7	0.8	0.2	0.4	18.1	39.5

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